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INSTRUCTIONS

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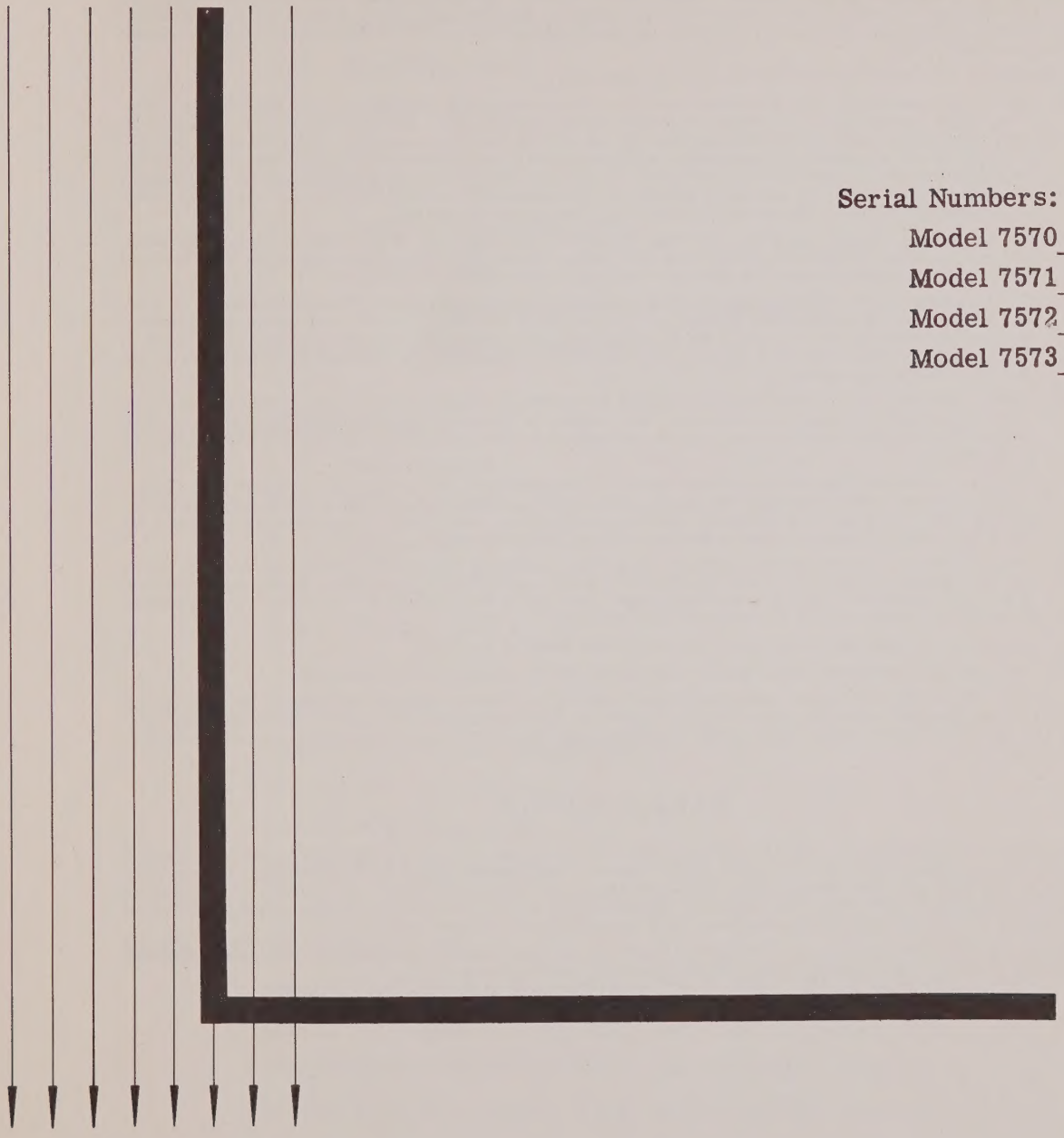
Beckman®
INSTRUMENTS, INC.
BERKELEY DIVISION

INSTRUCTION MANUAL

MODEL 7570 SERIES
Frequency Conversion Equipment

Serial Numbers:
Model 7570_____
Model 7571_____
Model 7572_____
Model 7573_____



Beckman® INSTRUMENTS, INC.
BERKELEY DIVISION
2200 Wright Avenue
Richmond, California

March 1963

WARRANTY

Instruments sold by Berkeley Division, Beckman Instruments, Inc., (hereafter called "the Company") are warranted only as stated below.

Subject to the exceptions and upon the conditions specified below, the Company agrees to correct, either by repair, or, at its election, by replacement, any defect of material or workmanship which develops within one year after delivery of the instrument to the original purchaser by the Company or by an authorized representative, provided that investigation and factory inspection by the Company discloses that such defect developed under normal and proper use.

The exceptions and conditions mentioned above are the following:

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(b) All instruments claimed defective must be returned to the Company, transportation charges prepaid, and will be returned to the customer with the transportation charges collect, unless the item is found to be defective in which case the Company will pay all transportation charges.

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(d) Except as stated above, the Company makes no warranty, express or implied (either in fact or by operation of law), statutory or otherwise; and, except to the extent stated above, the Company shall have no liability under any warranty, express or implied (either in fact or by operation of law), statutory or otherwise.

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(f) Representations and warranties made by any person, including representatives of the Company, which are inconsistent or in conflict with the terms of this warranty (including but not limited to the limitation of the liability of the Company as set forth above) shall not be binding upon the Company unless reduced to writing and approved by an officer of the Company.

(g) This warranty shall be governed by the laws of the State of California.

Claims for damage in shipment should be filed promptly with the transportation company.

All correspondence concerning the instrument should specify the model and serial number. This information appears on the company name plate. Any inquiry concerning details of operation, possible modifications, etc., should be addressed to the Sales Department, Berkeley division of Beckman Instruments, Inc., Richmond 4, California.

REPAIR SERVICE

Experienced service personnel and special test equipment are available at the factory to perform any necessary repairs. Every effort will be made to expedite the repair of instruments returned for servicing. Repair work will be performed only upon receipt of a written purchase order or authorization. Instruments to be repaired should be addressed to SERVICE AND REPAIR DEPARTMENT with transportation charges prepaid. Repaired instruments will be returned to the purchaser with transportation charges collect.

Berkeley reserves the right to make changes in design at any time without incurring any obligation to modify equipment previously purchased to conform to subsequent design changes.

BERKELEY DIVISION
BECKMAN INSTRUMENTS, INC.

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SCHEMATIC DIAGRAMS

Model 7570 Basic Amplifier (Dwg. No. D401733-Rev. G)
Model 7571 Converter (Dwg. No. 7571 D 1-Rev. F)
Model 7572 Converter (Dwg. No. 7572 D 1-Rev. J)
Model 7573 Converter (Dwg. No. D 403360-Rev. E)

ILLUSTRATIONS

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SECTION 1

INTRODUCTION

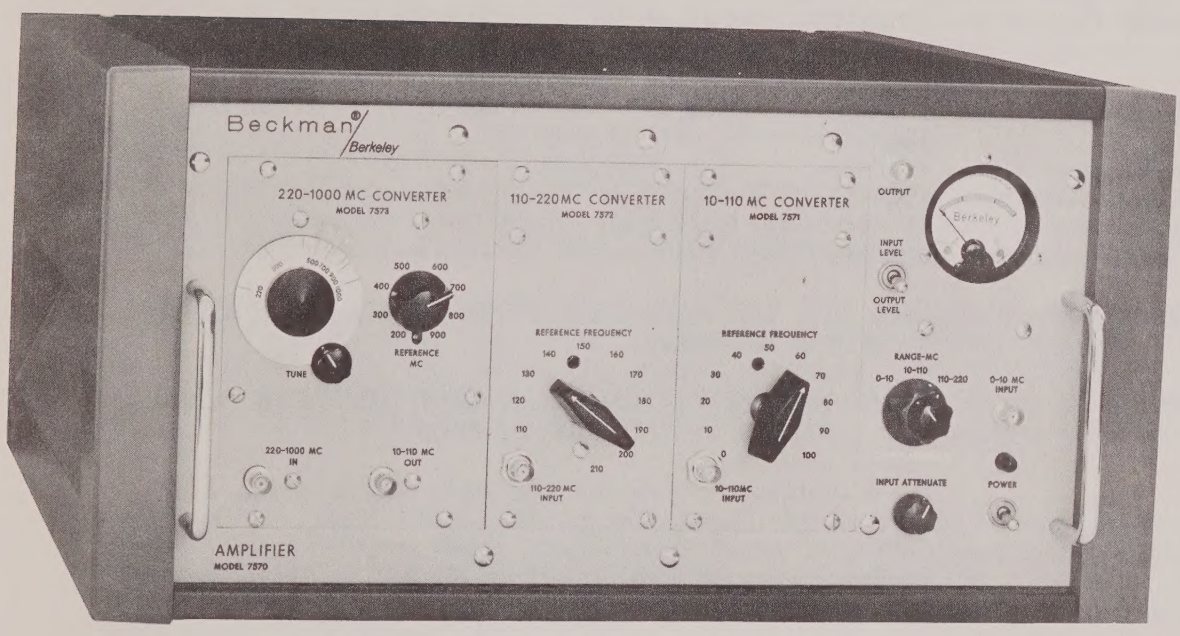


Fig. 1-1. Front Panel view of Model 7570 with full complement of Converter modules.

1.1 GENERAL DESCRIPTION

The 7570 Series basic amplifier and frequency converters increase the sensitivity and extend the frequency measuring range of Beckman 10 Mc counters to 110, 220, or 1000 Mc.

A video amplifier, power supply, and circuitry for generating a 10 Mc reference from the 1 Mc standard of the counter are contained in the rack or cabinet mounted chassis of the Model 7570. This chassis houses the Converter Models 7571, 7572, and 7573. Used alone, the Model 7570 is a preamplifier which increases the sensitivity of the counter to 2 mv rms over the 10 Kc to 10 Mc range. To extend the frequency range above 10 Mc, converters are added as described under section 1. 2 (Specifications).

1.2 SPECIFICATIONS

	7570	7571	7572	7573
Sensitivity:	2 mv	10 mv	20 mv	1 mw
*Frequency Range:	10 Kc to 1 Mc	10 Mc to 110 Mc	110 Mc to 220 Mc	220 to 1000 Mc
Input Impedance:	1 meg, 30 $\mu\mu$f	50 Ω	50 Ω	50 Ω
Gain:	100	------	------	------
Output:	100 mv	------	------	------
Power Required:	105, 117, 126 volts ±10%, 50/60 cps (supplied wired for 117 v) 100 watts			
Dimensions:	Cabinet mount:	10-1/4 in. high, 20-3/4 in. wide, 16-1/2 in. deep.		
	Rack mount:	8-3/4 in. high, 19 in. wide, 16 in. deep.		
Weight:	40 lbs.	5 lbs.	5 lbs.	10 lbs.

*Total bandwidth of FM on input signal must not exceed 100 Kc

1.3 APPLICATIONS

Wherever a wide range of frequencies (from 10 Kc to 1000 Mc) needs, quick, accurate measurement with a minimum of adjustment, the 7570 Series Heterodyne equipment is suitable. The adjustment of oscillators, calibration of high frequency signal generators, and monitoring of high frequency carriers are a few of the applications for this instrument.

SECTION 2

OPERATION

2.1 OPERATING PRINCIPLES

The 7570 Series Heterodyne equipment is designed to operate with a Beckman 10 Mc Counter (Model 7170 or 7370). These Converters extend the Counter's range to 1000 Mc. The Model 7570 amplifier houses three Converter units: 7571 (10-110 Mc), 7572 (110-220 Mc), 7573 (220-1000 Mc).

An input signal is fed to the appropriate Converter (Model 7571 or 7572. The REFERENCE FREQUENCY Selector is set to produce a difference frequency (frequency derived from the REFERENCE FREQUENCY indicated on the front panel, and the unknown input frequency) of less than 10 Mc. A deflection on the output meter of the Model 7570 AMPLIFIER indicates this condition.

Unlike Models 7571 and 7572, the Model 7573 uses an input tuner which indicates the approximate input signal frequency. An approximation of the proper fixed REFERENCE FREQUENCY is made by reading the TUNE dial. The reference signal then mixes with the input to produce a beat signal below 110 Mc. This beat signal is fed to the Model 7571 Converter and measured as described in this manual.

After proper reference frequency selection, the amplifiers output level is adjusted to fall within a fixed range indicated on the meter (see section 2.4). The frequency of this output signal is measured by the 10 Mc Counter. The unknown frequency is equal to the REFERENCE FREQUENCY setting plus the reading on the Counter.

2.2 INSTALLATION

The Model 7570 Series equipment is ready for operation as received. Converter modules obtained separately may be installed in the instrument as described in section 2.2.1. To energize the instrument, connect the power cord to a 117v ac, 60 cps source, and turn on the POWER Switch. After a warmup period of about two minutes, the instrument will be ready for operation.

2.2.1 Installing a Converter Module

To install a Converter module, proceed as follows:

1) Note from Figure 1 the proper location for the Converter module being installed, and remove the existing blank panel from that position.

2) Mount the Converter module in the basic amplifier unit, using the same four screws which held the blank panel in place.

3) Connect the three cables coming out of the Converter chassis as shown in Figure 2-1, for Models 7571 and 7572; two cables for Model 7573.

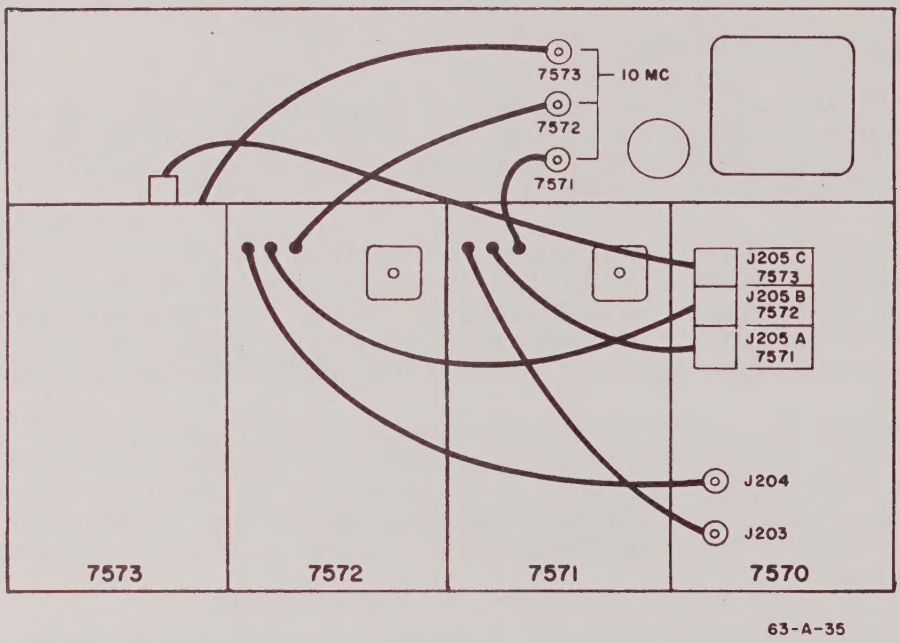


Fig. 2-1. Cable connections for Converter Modules (top view).

2.3 OPERATING CONTROLS AND CONNECTORS

The operating Controls and Connectors on the instrument (see Figure 1-1) have the following functions:

POWER Switch: Turns power on and off.

RANGE-MC Selector: Selects one of three operating ranges: 0 to 10 Mc, 10 to 110 Mc or 110 to 220 Mc.

REFERENCE FREQUENCY Selector: Selects the fixed frequency to mix with the input signal in the Converter.

INPUT ATTENUATE Control: Varies the level of the input signal in the Converter.

OUTPUT ATTENUATE Control: Varies the level of the output signal from the Model 7570 Amplifier.

INPUT LEVEL-OUTPUT LEVEL Switch: Determines whether meter indicates level of input signal or output signal.

Meter Indicator: Indicates level of input signal or output signal depending on the position if INPUT LEVEL-OUTPUT LEVEL switch. Indicates beat signal when selecting correct reference frequency.

INPUT Connector: Front panel Connectors for signal inputs. There is one INPUT Connector for each Converter.

OUTPUT Connector: The instrument's output appears at this front panel Connector.

1 MC INPUT Jack (located at rear of instrument): 1 Mc reference input from Counter.

2.4 OPERATING PROCEDURE

2.4.1 Measuring Frequencies in the 10 to 220 Mc Range

1) Connect the 1 MC INPUT Connector at the rear of the Model 7570 to the FREQ Connector at the rear of the Counter.

2) Connect the OUTPUT Connector on the front panel of the Model 7570 to the INPUT jack on the front panel of the Counter (E INPUT on the Model 7370).

3) Set the Controls on the Counter as follows:
   a) FUNCTION Selector to E/UT.
   b) TIME-SECONDS Selector to 1.
   c) ATTENUATION Selector to 1.

4) Couple the signal to be measured to the INPUT connector of the appropriate Converter unit (Model 7571 or 7572).

5) Set the RANGE-MC Selector to either the "10-100" or "110-220" position depending on the frequency range of the input signal.

6) Rotate the INPUT ATTENUATE and OUTPUT ATTENUATE Controls to their maximum clockwise positions.

7) Set the INPUT-LEVEL-OUTPUT LEVEL Switch to OUTPUT LEVEL.

8) Starting with the lowest frequency setting, rotate the REFERENCE FREQUENCY Selector through each one of its position, while observing the meter for a deflection.

9) Set the REFERENCE FREQUENCY Selector to the position which produces a deflection on the meter. If the meter needle goes off scale, set the meter switch to INPUT LEVEL and rotate the INPUT ATTENUATE control counterclockwise until the meter reads just below the green band. (The input level should have to be reduced only when using the 10 Mc setting on the 7571 Converter.)

   If an output indication is obtained in two REFERENCE FREQUENCY positions, set the Selector to the lower of the two frequencies.

10) With the meter switch in the OUTPUT LEVEL position adjust the OUTPUT ATTENUATE Control so that the meter reads within the green band.

11) At this point the DISPLAY Control on the Counter can be adjusted for a convenient count display time, and a reading taken.

    To find the unknown frequency, add the reading on the Counter to the REFERENCE FREQUENCY setting on the Converter unit. For example, if the Counter displays a reading of 7353620 with the REFERENCE FREQUENCY Selector set at 80, the unknown frequency is 87.353620 Mc.

In the Models 7571 and 7572 the reference frequency is variable in steps of 10 Mc. There is always at least one setting of the REFERENCE FREQUENCY Selector which will give a beat signal indication on the meter. However, when the signal is near a multiple of 10Mc, a meter deflection may result with the two adjacent settings of the REFERENCE FREQUENCY Selector. Use the lower setting under these conditions. If the Counter then gives a reading somewhat greater than 10 Mc, a count obtained with the higher frequency setting can be used as a check on the first reading. For example, measuring an unknown frequency of 70.1 Mc might produce a beat signal indication with a reference frequency of 60 Mc, as well as with 70 Mc. Using the 60 Mc reference frequency would, therefore, result in a reading of 10.1 Mc on the Counter. A check with the 70 Mc reference frequency should then produce a reading of 100 Kc. If the unknown frequency were 69.9 Mc, only the reading with the 60 Mc reference frequency would give the correct results.

2.4.2 Measuring Frequencies in the 220 to 1000 Mc Range

1) Couple the input signal to the 220-1000 MC IN Connector on the Model 7573.

2) Set RANGE-MC selector on the Model 7570 to the 0-10 position, and the INPUT LEVEL-OUTPUT LEVEL Switch to INPUT LEVEL.

3) Slowly rotate the TUNE dial for maximum meter deflection.

4) Set the REFERENCE Selector to the reading indicated on the TUNE dial.

5) Connect the OUT Connector on the Model 7573 to the INPUT Connector on the Model 7571 Converter, and measure the output signal from the Model 7573 as described in section 2.4.1 of this manual.

Input frequencies close to 300 Mc may yield ambiguous readings when mixed with the 200 Mc reference signal. This is due to a third order product generated within the mixer corresponding to the second harmonic of 200 Mc (400 Mc) minus the input signal.

For example, with an input frequency of 302 Mc, a 200 Mc reference signal may produce an output signal of 98 Mc, as well as the correct one of 102 Mc. Although the 98 Mc signal may be somewhat lower in the level than the desired signal, there is no sure way to distinguish between the two readings. Therefore, determine the proper output signal first by obtaining a beat with the 400 Mc reference signal. In this case, a 98 Mc reading shows that the signal is definitely above 300 Mc. It is then possible to return to the 200 or 300 Mc reference and read the unknown frequency.

2.4.3 Measuring Frequencies under 10 Mc

1) Perform steps 1 through 3 of section 2.4.1.

2) Couple the input signal to the 0-10 MC INPUT Connector on the Model 7570.

3) Set the RANGE -MC Switch to the "0-10" position, and the INPUT ATTENUATE Control to its maximum clockwise position.

4) With the meter switch in the OUTPUT LEVEL position, adjust the OUTPUT ATTENUATE Control for a meter reading within the green band.

5) After adjustment of the DISPLAY Control on the Counter for a convenient display time, the unknown frequency can be read directly from the DCU indicators on the Counter.

SECTION 3

SERVICING

3.1 ADJUSTMENTS

In general, adjustments on this instrument are needed only when tubes are replaced. Furthermore, whenever a tube is replaced, only the components affected by that tube need adjustment. Refer to the following table for required adjustments.

Tube Replaced	Components to be Adjusted	Ref. Section
V101	L101	
V102	T102, L101	3.2.1
V103	L104, T102	
V301	C302, C305	
V302	C311	3.3.1
V303	L314, T321	
V304	T301, T302, L311, L313	3.3.2
V305	T301, L314	
V401	C404, C405	
V402	C411	3.4.1
V404	T402, L412	
V406	T403, L412	3.4.2
V407	T403, T431, T441	
V501	L501	
V502	L501, T502	
V503	L501, L502	3.5.2-.6
V504	L503, C521	
V505	L523, C522	

3.1.1 Test Equipment Needed for Servicing Models 7571 & 7572

1) VHF Signal Generator (range up to 220 Mc).

2) Wideband Oscilloscope (10 Mc or better bandwidth).

3) Vacuum Tube Voltmeter (10 megohms or better input impedance).

3.2 MODEL 7570

3.2.1 Adjusting the 1 MC to 10 MC Multiplier

1) Couple a 1 Mc signal from either the 10 Mc Counter or any other available source to the 1 MC INPUT Connector (J101) at the rear of the Model 7570.

2) Loosely couple an oscilloscope to the lead from pin 6 of V101, and adjust L101 for a peak signal on the scope.

3) Loosely couple the scope to the lead from pin 1 of V103 and tune T102 for a peak signal. (Note: both sides of T102 are adjusted through the same opening in the top of the transformer can; one adjustment lies below the other. For the lower adjustment, push the alignment tool through the upper one.)

4) Connect the oscilloscope to one of the 10 MC output Connectors on the amplifier chassis and adjust both L104 and T102 for a maximum 10 Mc output signal.

3.3 MODEL 7571

3.3.1 Adjusting the RF Amplifier and Mixer in the 7571 Converter

1) Remove the Converter module from the Model 7570 unit; then remove the perforated cover from the lower part of the Converter.

2) Restore all cable connections from the Converter to the Model 7570, and make sure that a one megacycle reference signal is being fed into the 1 MC input jack at the rear of the Model 7570.

3) Set the controls on the instrument as follows:

   a) RANGE-MC Selector to the "10-110" position.

   b) INPUT ATTENUATE and OUTPUT ATTENUATE Controls to the maximum clockwise position.

   c) INPUT LEVEL-OUTPUT LEVEL Switch to OUTPUT LEVEL.

   d) REFERENCE FREQUENCY Selector to "100".

4) Connect the VHF signal generator to the INPUT Connector on the Converter, and set the generator to produce a 105 megacycle signal at a level of 10 mv.

5) Adjust capacitors C302, C305, and C311 for maximum output as indicated by the meter on the Model 7570. (Note: These capacitors are located on the side of the Converter chassis near tubes V301 and V302.)

3.3.2 Adjusting the Reference Circuits in the 7571 Converter

1) Place a short jumper across diodes CR202 and CR203, and connect a scope to the OUTPUT Connector (J202) on the Model 7570.

2) Set the Controls as in step 3 of section 3.3.1. Feed a 101 Mc signal to the 7571 INPUT Connector and adjust L314 (top of chassis) for maximum output.

3) Turn the REFERENCE FREQUENCY Selector to the 10 Mc position. With an input signal of 11 Mc, adjust T301 (at top of chassis) and T321 (at front panel) for maximum output. Adjust T302 (top of chassis) for minimum 10 Mc ripple in the output. These adjustments are interdependent and should be repeated at least once.

4) Inductors L311 and L313 (top of chassis) normally need no adjustment unless tube V304 is changed. These inductors comprise a 60 to 70 Mc band pass filter, and should be adjusted for minimum modulation on the 10 Mc band.

5) Turn the REFERENCE FREQUENCY Selector to each of its other positions. At each setting, use an input signal 1 Mc higher than the reference frequency and adjust the corresponding reference coil (T330) at the front panel for maximum output.

3.4 MODEL 7572

3.4.1 Adjusting the RF Amplifier and Mixer

1) Perform steps 1 through 4 of section 3.1.3, but set the RANGE-MC Switch on the Model 7570 to the "110-220" position, and the REFERENCE FREQUENCY Selector on the 7572 to "210". Adjust the frequency of the input signal to 215 Mc.

2) Adjust capacitors C404, C405, and C412 for maximum output as indicated by the meter on the amplifier unit. (Note: these capacitors are located on the side of the Converter chassis near tubes V401 and V402.)

3.4.2 Adjusting the Reference Circuits in the 7572 Converter

1) Place a short jumper across diodes CR202 and CR203, and connect a scope to the OUTPUT Connector (J202) on the Model 7570.

2) Set the Controls on the instrument as follows:

   a) RANGE-MC Switch to the "110-220" position.

   b) INPUT ATTENUATE and OUTPUT ATTENUATE Controls to the maximum clockwise position.

c) INPUT LEVEL-OUTPUT LEVEL Switch to OUTPUT LEVEL.

d) REFERENCE FREQUENCY Selector to "210".

3) Feed a 211 Mc signal to the 7572 INPUT Connector and adjust L412, T403, (both at top of chassis) for maximum output. Adjust T402 (top of chassis) for maximum output with minimum modulation on the odd bands.

4) Turn the REFERENCE FREQUENCY Selector to each of its positions. At each setting, use an input signal 1 Mc higher than the reference frequency, and adjust the corresponding reference coil (T431 through T441) at the front panel for maximum output.

3.5 MODEL 7573

3.5.1 Test Equipment Required for Servicing Model 7573

1) Signal Generator (range up to 1K Mc).

2) Wide-Band Oscilloscope (10 Mc or better bandwidth).

3) Milliameter.

4) Grid-dip meter.

3.5.2 Adjusting the 10 Mc Amplifier

Using the grid-dip meter, adjust L501 for a maximum reading at 10 Mc.

3.5.3 Adjusting the 10 Mc to 100 Mc Multiplier

Using the grid-dip meter, adjust T501 for a maximum reading at 50 Mc; adjust L502 and L503 for a maximum reading at 100 Mc.

3.5.4 Preliminary Adjustment of the 100 to 200 and 100 to 300 Mc Multipliers

With an input signal in the 200 to 300 Mc range and a REFERENCE setting of "200", adjust C522 for a maximum output from the Model 7570. With the same input signal and a reference setting of "300", adjust C521 for a maximum output.

3.5.5 Adjusting the Reference Generator

Set the REFERENCE Selector on the Model 7571 to 90 Mc; couple an oscilloscope to the OUTPUT of the Model 7570, and proceed as outlined in table 3-1.

3.5.6 Bias Adjustment

With an input signal of 790 Mc and a REFERENCE setting of "700", adjust R525 for a maximum signal to spurious ratio at the output.

Table 3-1.

Model 7573 REFERENCE Setting	Input Signal Frequency	Procedure
900	991 Mc	a) Adjust turret capacitor* for maximum output signal. b) Adjust C521 and turret capacitor for maximum "signal to spurious" ratio at the output.
800	891	a) Adjust turret capacitor for maximum output signal. b) Adjust C522 and turret capacitor for maximum "signal/spurious" ratio.
700	791	Adjust turret capacitor and R526 for maximum "signal/spurious" ratio.
600	691	Adjust turret capacitor for maximum "signal/spurious" ratio.
500	591	Adjust turret capacitor, R527, and R528 for maximum "signal/spurious" ratio.
400	491	Adjust turret capacitor for maximum "signal/spurious" ratio.
300	291	Adjust turret capacitor for maximum "signal/spurious" ratio.
200	291	Adjust turret capacitor for maximum "signal/spurious" ratio.

*The turret capacitor for each reference frequency setting becomes accessible through the panel opening just below the REFERENCE Selector Control.

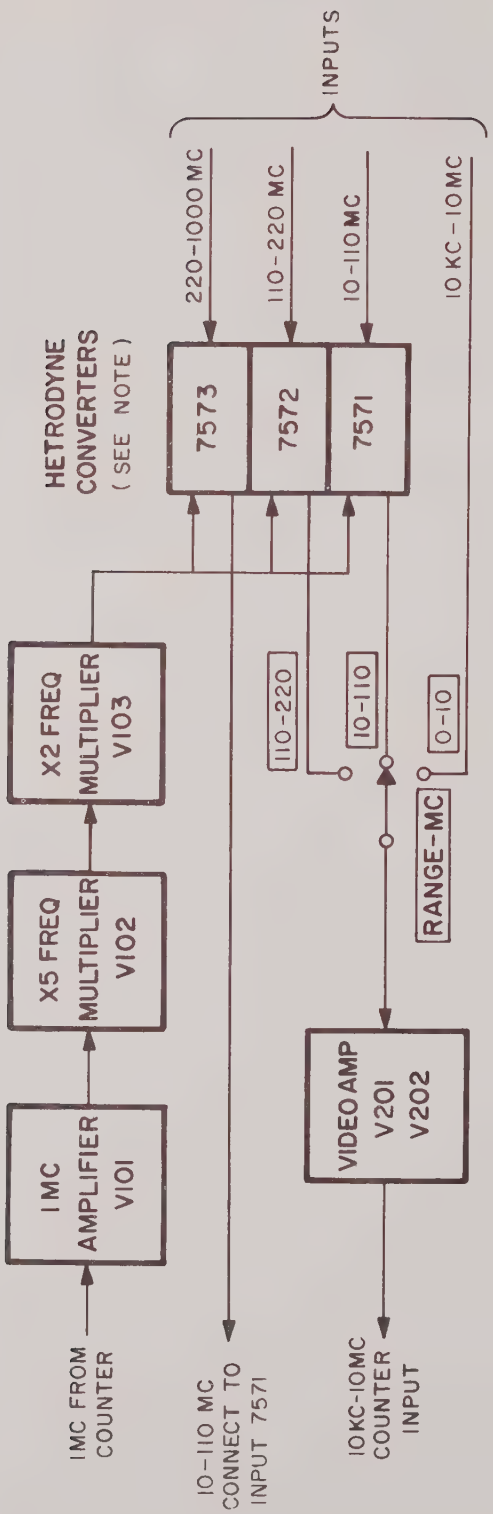


Fig. 3-1. Block Diagram of Model 7570 Basic Amplifier.

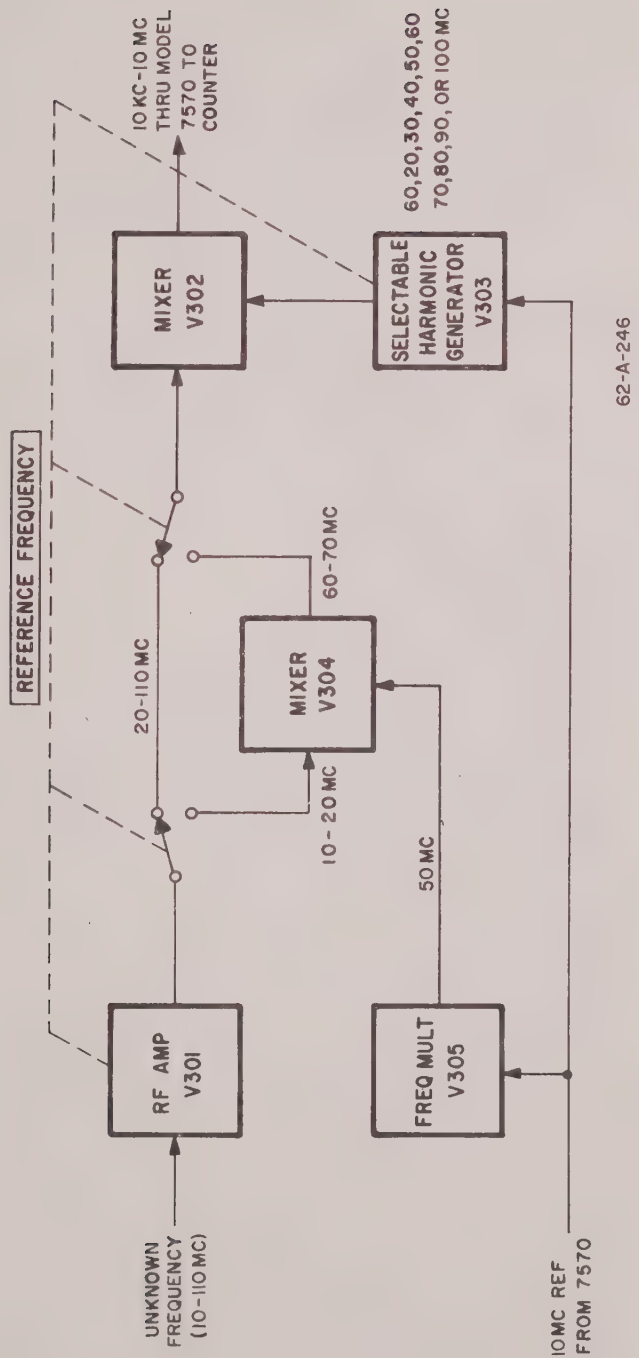
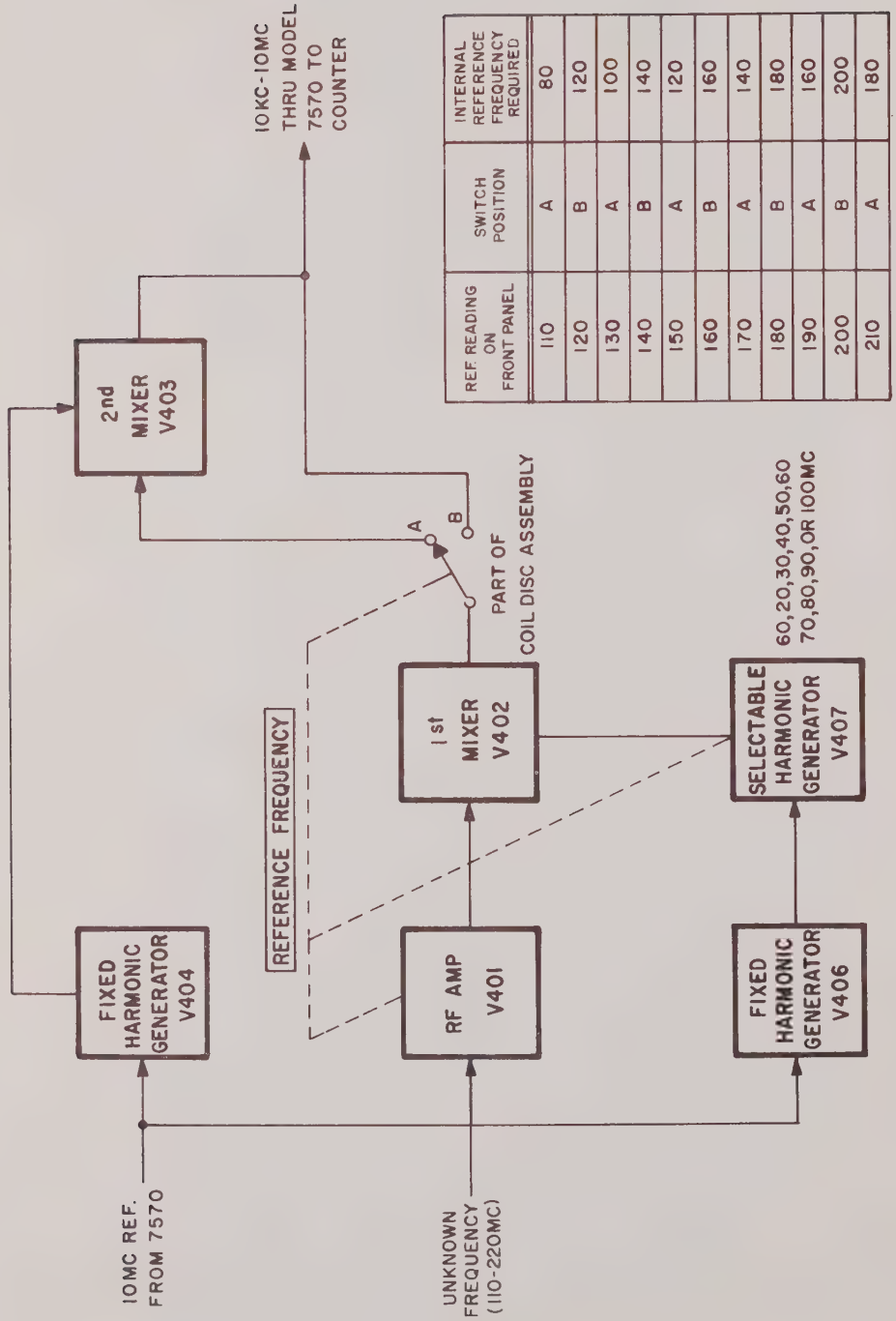


Fig. 3-2. Block Diagram of Model 7571 Hetrodyne Converter.



REF. READING ON FRONT PANEL	SWITCH POSITION	INTERNAL REFERENCE FREQUENCY REQUIRED
110	A	80
120	B	120
130	A	100
140	B	140
150	A	120
160	B	160
170	A	140
180	B	180
190	A	160
200	B	200
210	A	180

Fig. 3-3. Block Diagram of Model 7572 Hetrodyne Converter.

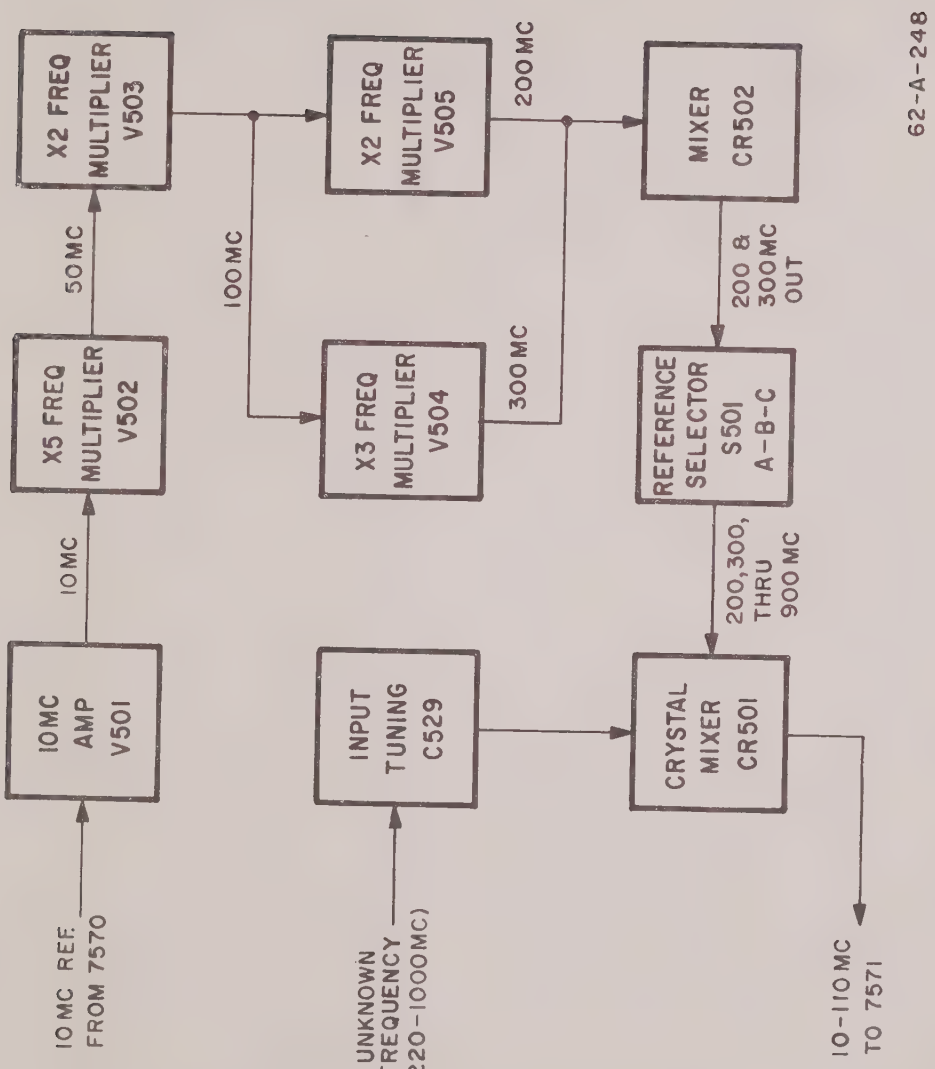


Fig. 3-4. Block Diagram of Model 7573 Hetrodyne Converter.

SECTION 4

PARTS LIST

MODEL 7570 BASIC AMPLIFIER

(Refer to Dwg. No. D401733 Rev. G)

NOTE

The following parts list includes all electrical components except fixed composition resistors whose value, rating, and tolerance are given on the schematic diagram.

Detail No.	Beckman Stock No.	Description	Manufacturer & No.
C101 thru C106	633-804718	Capacitor, disc, 0.01μf	Erie 811-.01
C107	633-804706	Capacitor, disc, 0.001μf	Centralab DD102
C108	633-804674	Capacitor, ceramic, 47pf	Erie NPO 338-470
C109		Same as C108	
C110		Same as C101	
C111	633-807857	Capacitor, ceramic, 1500pf	Erie GP28
C112		Same as C101	
C113		Same as C108	
C114		Same as C101	
C115	631-802987	Capacitor, electrolytic, 80μf x 10μf, 450 V	Sangamo PLD719
C116 thru C118		Same as C101	
C119		Same as C107	
C120	637-804763	Capacitor, mica, 180pf, 5%	
C121		Same as C101	
C122	633-804665	Capacitor, ceramic, 20pf, 600V	Erie NPO 331
C123		Same as C101	
C201	631-091698	Capacitor, electrolytic, 10μf x 10μf x 10μf, 450V	Sangamo PLT 4510
C202	633-804717	Capacitor, disc, axial, 0.01μf	Sprague 29C9
C203	639-804917	Capacitor, paper, 0.25μf, 400V dc	Sangamo 300425
C204	639-804909	Capacitor, paper, 0.05μf, 400V	Sangamo 300415
C205	633-804653	Capacitor, ceramic, 3.3pf, 600V dc	Erie GPIK
C206	633-804663	Capacitor, ceramic, 15pf, 600V dc	Erie NPO120
C207		Same as C206	

Model 7570 Basic Amplifier - Continued

Detail No.	Beckman Stock No.	Description	Manufacturer & No.
C208		Same as C205	
C209		Same as C101	
C210		Same as C209	
C211	633-804707	Capacitor, ceramic, 0.001μf, 600V dc	Erie GPK
C212		Same as C209	
C213	631-064373	Capacitor, paper, 10μf, 25V dc	Sangamo MMT0210
C214 & C215		Same as C209	
C216		Same as C211	
C217		Same as C209	
C218		Same as C213	
C219		Same as C203	
C220		Same as C209	
C221		Same as C213	
C222		Same as C202	
C223		Same as C111	
C224	633-804667	Capacitor, ceramic, 22pf	Erie NPO
C225		Same as C101	
CR101	755-800354	Diode, ZA60	National Semi-Conductor
CR102	755-023744	Diode, 1N1084	Sarkes-Tarzian M500
CR103 thru CR105		Same as CR102	
CR201	755-800271	Diode, 1N82	CBS
CR202 & CR203		Same as CR201	
F101	731-801574	Fuse, Slo Blo, 3 amp.	Littlefuse 313003
F102		Same as F101	
J101 thru J104	670-806738	Connector, coaxial	Automatic Metals UG1094/U
J201 thru J204		Same as J101	

Model 7570 Basic Amplifier - Continued

Detail No.	Beckman Stock No.	Description	Manufacturer & No.
J205	672-806803	Connector, female, 18-pin, w/brackets	Varicon F11820-1
I101	824-805843	Lamp, neon	Eldema 1B2 #1029
L101		Inductor	B/B 7570 A 15
L102	795-807887	Inductor, molded, 18μh	National Coil QA18-1
L103	795-807909	Inductor, molded, 180μh	National Coil SA180-P
L104		Inductor	B/B 7570 A 17
L201	795-807946	Inductor, 10/18μh	CTC X2060-4
L202	795-807891	Inductor, 25μh	Wilco 1025-15
L203		Same as L201	
L204		Same as L102	
L205		Same as L204	
L206	795-807875	Inductor, molded, 6.8μh	National Coil RB 6.8-P
L207	783-807862	Shielding Bead, Ferrite	Ferroxcube Corp. Type 225-T-118A205
L208 thru L210		Same as L207	
M201	813-402961	Meter, 0-200μa	Beckman/Berkeley
P101	664-079205	Line Cord, gray, 6-1/2", w/radial pin	Cornish
R123	614-806327	Potentiometer, 100K, 2W, 10%	AB JU 1041 SD3048
R201	614-806318	Potentiometer, 5K, 2W, 20%	AB JU 5022 SD3048
R223	711-403284	Potentiometer, 5K, 2W, 20%, part of S202	Beckman/Berkeley
S101 & S201	701-029723	Switch, DPDT	
S202	711-403284	Switch, rotary, w/pot (R223)	Beckman/Berkeley
T101	792-402952	Transformer, power	Beckman/Berkeley
T102		Transformer, variable	B/B 7570 A 16
TP103	683-806915	Tip Jack	Whitso JNP-12
V101	751-015096	Tube, 6AU6	
V102		Same as V101	
V103	751-800233	Tube, 6CL6	
V104		Same as V101	
V105	751-020285	Tube, 6080	

Model 7570 Basic Amplifier - Continued

Detail No.	Beckman Stock No.	Description	Manufacturer & No.
V201	751-800237	Tube, 6DJ8	Amperex
V202		Same as V201	
XF101	735-007268	Fuse Holder, 1-1/4 x 1/4	Bussman HKP
XF102		Same as XF101	
XV101	860-811796	Tube Socket, 7 pin, min., w/shield	Elco ST235PH
XV102		Same as XV101	
XV103	860-002064	Tube Socket, 9 pin, min., w/shield	Elco 283BC
XV104	860-802325	Tube Socket, 7 pin, min., w/o shield	Cinch 13244
XV105	860-802331	Tube Socket, octal	Cinch 9950
XV201	860-802335	Tube Socket, 9 pin, min., w/o shield	Cinch 1611
XV202		Same as XV201	
Z101	771-802473	Line Filter, 2 x 5 amp	Sprague 64864

MODEL 7571 CONVERTER

(Refer to Dwg. No. 7571D1 Rev. F)

*C301		Capacitor, 22pf	
*C302		Capacitor, 0.5-3pf	
*C303		Capacitor, 0.001μf	
*C304		Same as C303	
*C305		Same as C302	
*C306 thru *C308		Same as C303	
C309	633-804718	Capacitor, ceramic, 0.01μf, disc	Erie 811-.01
*C310		Same as C303	
*C311		Same as C302	
C312		Same as C309	
*C313 & *C314		Same as C303	
*C316 & *C317		Same as C303	

*Part of Coil Assembly, B/B Part No. 795-403956

Model 7571 Converter - Continued

Detail No.	Beckman Part No.	Description	Manufacturer & No.
*C318		Capacitor, 15pf	
*C319		Capacitor, 0.01μf	
*C320		Same as C318	
*C321 & *C322		Same as C303	
C323	633-804706	Capacitor, ceramic, 0.001μf, 1000V, 20%	Centralab DD102
C324		Same as C312	
C326	633-804653	Capacitor, ceramic, 3.3pf, 600V, 10%	Erie GP1K
C327	633-804663	Capacitor, ceramic, 15pf, 600V, 10%	Erie NPO120
C328 thru C331		Same as C323	
C332	633-804671	Capacitor, ceramic, 33pf, 600V, 5%	Erie NPO
C333	633-804667	Capacitor, ceramic, 22pf, 600V, 5%	Erie NPO
C334	633-804661	Capacitor, ceramic, 12pf, 600V, 5%	Erie NPO
C335 & C336		Same as C323	
C337	633-804657	Capacitor, ceramic, 5pf, 600V, 10%	Erie NPOK
C338 & C339		Same as C312	
C340	637-804751	Capacitor, mica, 75pf, 500V, 5%	Sangamo RR 1475
*C341 thru *C343		Capacitor, 0.005μf	
*C344		Capacitor, 0.001μf	
*CR301		Diode, 1N82	
J301	670-806736	Connector, coaxial, UG909/U	Auto. Metal Prod. RF0206A
*L301 thru *L311		Inductor	
*L313 & *L314		Inductor	
P205A	672-806793	Connector, 6 pin, male, Varicon	Elco M3062
P301	670-806736	Connector, BNC type	Auto. Metal Prod.

*Part of Coil Assembly, B/B Part No. 795-403956

Model 7571 Converter - Continued

Detail No.	Beckman Stock No.	Description	Manufacturer & No.
P302		Same as P301	
*T301 & *T302		Transformer	
*T311 thru *T330		Transformer	
V301	751-800236	Tube, electron, 6CY5	
V302	751-800251	Tube, electron, 5636	
V303	751-800263	Tube, electron, E180F	
V304	751-800223	Tube, 6AS6	
V305	751-015096	Tube, 6AU6	
*XV301		Socket, 7 pin	
*XV302		Socket, 8 pin	
*XV303		Socket, 9 pin	
XV304	860-802325	Socket, 7 pin, w/o shield	
XV305		Same as XV304	

MODEL 7572 CONVERTER

(Refer to Dwg. No. 7572 D 1 Rev. J)

**C401		Capacitor, disc, 22pf	
**C402		Capacitor, disc, 47pf	
**C403		Capacitor, disc, 0.001μf	
**C404		Capacitor, 0.5-3pf	
**C405		Same as C404	
**C406 thru **C410		Same as C403	
**C411		Same as C404	
**C412		Same as C403	
**C413		Capacitor, 0.005μf	
**C414 & **C415		Same as C403	

*Part of Coil Assembly, B/B Part No. 795-403956.
**Part of Coil Assembly, B/B Part No. 795-403958.

Model 7572 Converter - Continued

Detail No.	Beckman Stock No.	Description	Manufacturer & No.
C416	633-804706	Capacitor, ceramic, 9.001μf, 1000V, 20%	Centrlab DD102
*C417		Capacitor, disc, 33pf	
C418		Same as C416	
C419	633-804718	Capacitor, ceramic, 0.01μf, 450V	Erie 811-.01
C420	633-804656	Capacitor, ceramic, 5pf, 600V, 10%	Erie NPO
C421		Same as C419	
C422	633-804667	Capacitor, ceramic, 22pf, 600V, 5%	Erie NPO
C423	637-807486	Capacitor, mica, 130pf, 500V, 5%	Sangamo RR1313
C424	633-804663	Capacitor, ceramic, 15pf, 600V, 10%	Erie NPO 120
C425		Same as C419	
C426	633-804655	Capacitor, ceramic, 4.7pf, 600V, 10%	Erie GPK-N-330
C432		Same as C422	
*C433		Capacitor, disc, 0.01μf	
C434	633-804671	Capacitor, ceramic, 33pf, 600V, 5%	Erie NPO
C435	639-804912	Capacitor, paper, 0.1μf, 400V dc	Astron ML-4-1
*C436		Same as C403	
*C437		Same as C433	
C438		Same as C416	
*C439		Capacitor, disc, 5pf	
*C440 thru *C442		Same as C403	
C443		Same as C416	
C444		Same as C434	
*C445		Same as C413	
*C446		Same as C413	
*C447		Capacitor, 0.001μf	
*CR401		Diode, crystal, 1N82AG	
J401	670-806736	Connector, coaxial, UG909/U	Automatic Metals
*L401 thru *L411		Inductor	

*Part of Coil Assembly, B/B Part No. 795-403958

Model 7572 Converter - Continued

Detail No.	Beckman Stock No.	Description	Manufacturer & No.
*L412		Inductor	
P205B	672-806793	Connector, 6 pin, male, Varicon	Elco M3062
P401	670-806740	Connector, RF0206A	Automatic Metals
P402		Same as P401	
*T401 thru *T403		Transformer	
*T411 thru *T421		Transformer	
*T431 thru *T441		Transformer	
V401	751-800236	Tube, 6CY5	
V402	751-800251	Tube, 5636	
V403	751-800223	Tube, 6AS6	
V404	751-079164	Tube, 6AH6	
V406	751-800233	Tube, 6CL6	
V407	751-800263	Tube, E180F	
*XV401		Socket, 7 pin	
*XV402		Socket, 8 pin	
XV403	860-802325	Socket, 7 pin, w/o lug, w/o shield	Cinch 13244
XV404		Same as XV403	
*XV406		Socket, 9 pin	
*XV407		Same as XV406	

*Part of Coil Assembly, B/B Part No. 795-403958.

MODEL 7573 CONVERTER

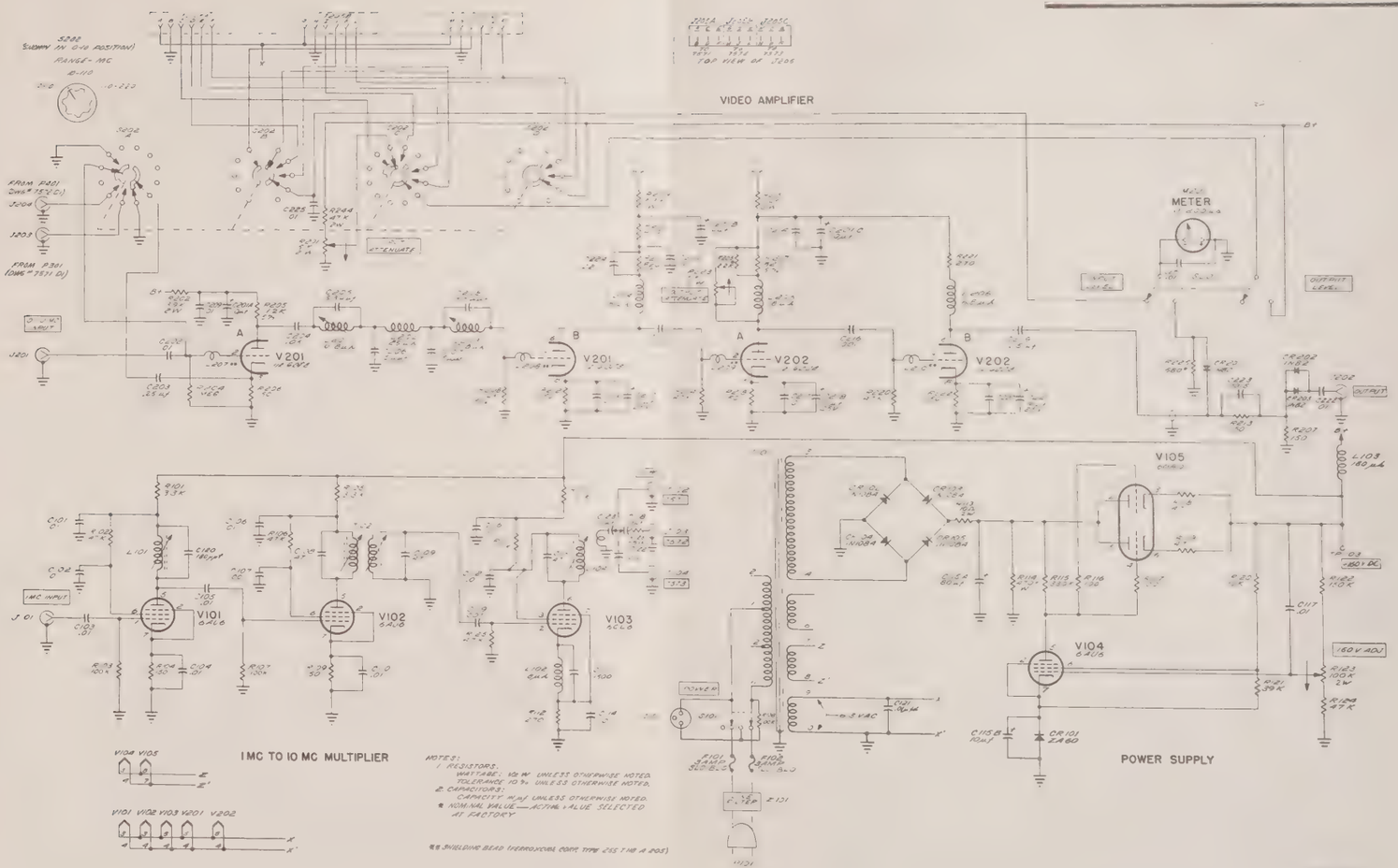
(Refer to Dwg. No. D403360-Rev. E)

Detail No.	Beckman Stock No.	Description	Manufacturer & No.
C502	633-804717	Capacitor, disc, 0.01μf, 500V	Sprague 599C9
C503 & C504		Same as C502	
C505	633-804663	Capacitor, ceramic, 15pf, 600V	Erie NPO
C506	633-804706	Capacitor, ceramic, 0.001μf, 1KV	Centralab DD102
C508 & C509		Same as C502	
C510	633-804656	Capacitor, ceramic, 5pf, 600V	Erie NPO A
C511		Same as C506	
C512		Same as C510	
C513 thru C517		Same as C506	
C518	633-804648	Capacitor, ceramic, 0.33pf	IRC
C519		Same as C506	
C521	647-805013	Capacitor, mica, variable, 1.8 - 8.7pf	Johnson 9-M-11
C522		Same as C521	
C523	633-804677	Capacitor, ceramic, 50pf, 600V	Erie NPO
C524	633-804704	Capacitor, ceramic, 0.001pf	Erie 327
C525		Same as C506	
C526 thru C528		Same as C524	
C529	647-805027	Capacitor, variable, air, 6.3 - 100pf	Hammarlund MC 100 M
C530	643-805006	Capacitor, ceramic, 6 - 25pf, NPO	Erie 3192
C531	633-804661	Capacitor, ceramic, 12pf, 600V	Erie NPO
C532		Same as C530	
C533	643-817329	Capacitor, plastic, 0.7/3pf	Erie 535-OR7
C534	633-804994	Capacitor, composition, 3.6pf	Stackpole GA
C535		Same as C534	
C536		Same as C533	
C537		Same as C534	
C538		Same as C533	
C539	633-804996	Capacitor, composition, 1.5pf, 500V dc	Stackpole GA

Model 7573 Converter - Continued

Detail No.	Beckman Stock No.	Description	Manufacturer & No.
C540 thru C542		Same as C533	
C547 & C548		Same as C524	
CR501	755-800287	Diode, 1N416B	Bomac
CR502		Same as CR501	
J501	670-806738	Connector, coaxial	Auto. Metals UG1094/U
J502 & J503		Same as J501	
L501		Inductor	B/B 7573 A 37
L502		Inductor	B/B 7573 A 38
L503		Inductor	B/B 7573 A 39
L504		Inductor	B/B 7573 A 40
L505		Inductor	B/B 7573 A 41
L508	795-807870	Inductor, 4.7μh	Nat'l Coil QA-4.7-P
L509	783-807862	Shielding Bead, Ferrite	Ferroxcube Corp. 255-T-118A 205
L510 thru L512		Same as L509	
P501	670-806740	Connector, coaxial	Auto. Metals RF0206A
P205C	672-806793	Connector, male, 6 pin, Varicon	Elco M3062
P503		Same as P501	
R524	601-000479	Resistor, 33K, 1W, 10%	AB EB
R525	614-806318	Potentiometer, 5K, 2W, 10%	AB JU 5021
R526	614-806301	Potentiometer, 20K, 1/2W, 20%	Clarostat Series 47
R527 & R528		Same as R526	
S501	711-403400	Switch, rotary	Beckman/Berkeley
T501		Transformer	B/B 7573 A 42
V501	751-800236	Tube, 6CY5	RCA
V502 thru V505		Same as V501	
XV501	860-802323	Socket, tube, 7 pin, min., w/lugs, w/o shield	Elco 316 BC
XV502 & XV503		Same as XV501	
XV504 & XV505		Socket, tube, 7 pin, Plexicon	Cinch 43A Erie 2.3.4.6.7.

MODEL 7570
BASIC AMPLIFIER
SCHEMATIC DIAGRAM



MODEL 7570
D401733 Rev. G
March 1963

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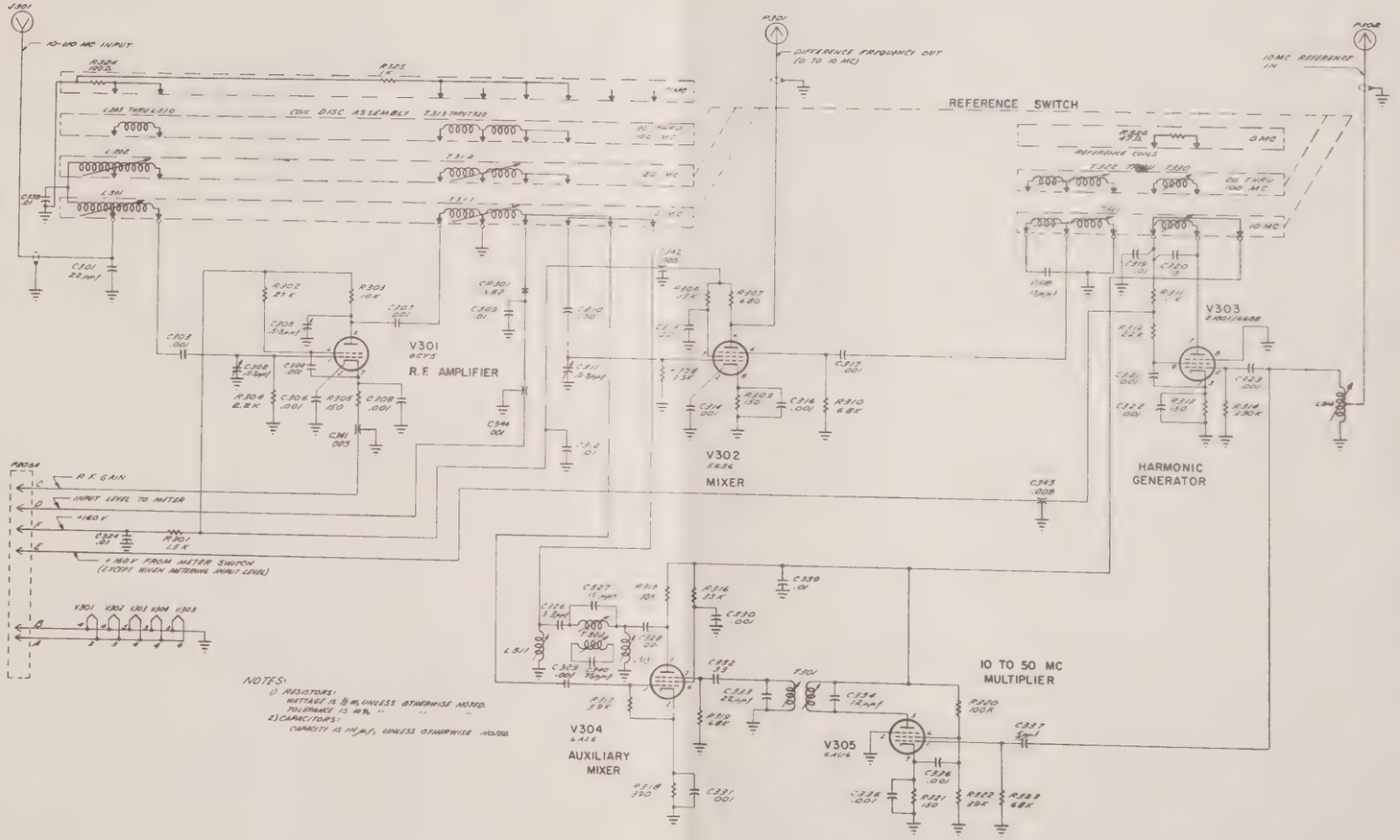
MODEL 7571
CONVERTER
SCHEMATIC DIAGRAM



MODEL 7572
CONVERTER
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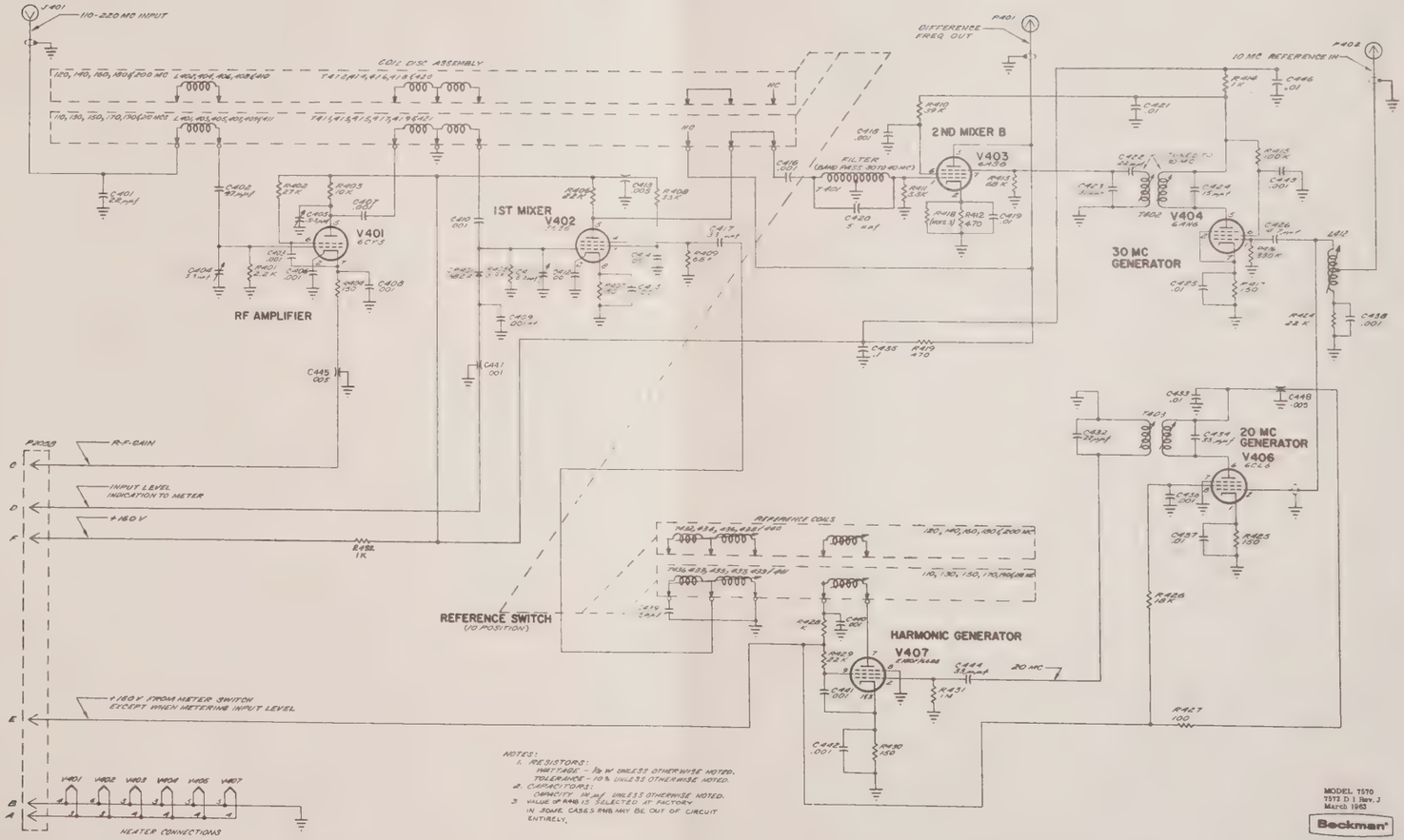

MODEL 7570
7573 D 1 Rev. J
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MODEL 7573
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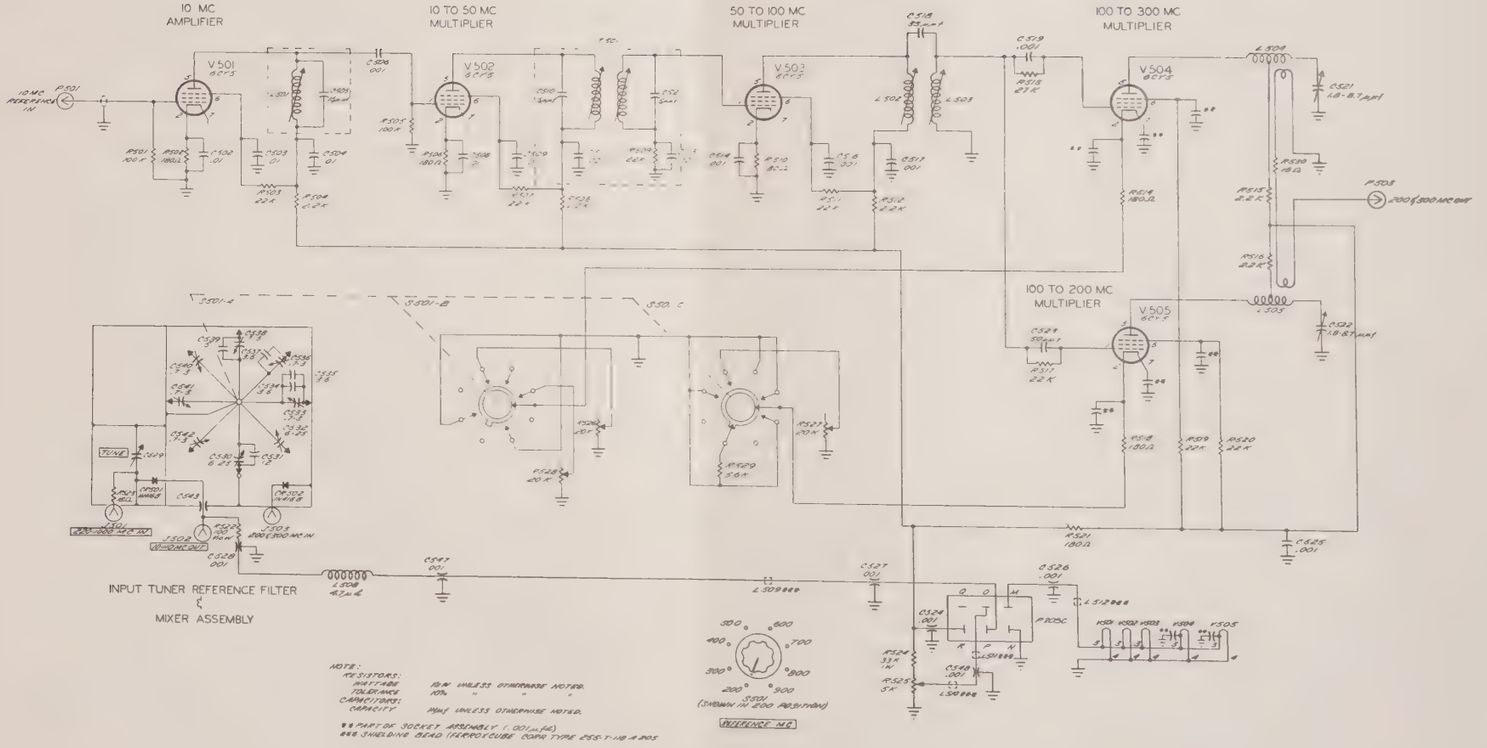

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International Division
Beckman Instruments, Inc.
2500 Harbor Blvd.
Fullerton, California
Phone: TRojan 1-4848

Systems Division
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2400 Harbor Boulevard
Fullerton, California
Phone: TRojan 1-4848

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